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FURTHER EVALUATION OF LOW-RANKED ITEMS IN STIMULUS-CHOICE PREFERENCE ASSESSMENTS

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The generality of the findings reported by DeLeon, Iwata, and Roscoe (1997) was examined by conducting two stimulus-choice preference assessments, the second of which evaluated low-ranked items from the initial assessment. Results for the 2 participants suggested that supplementary assessments of low-ranked items may be useful for identifying a wider variety of reinforcing stimuli.

DESCRIPTORS: choice, preference, stimulus preference assessment, reinforcer assessment

A number of preference assessments have been developed to identify potential reinforcers for individuals with developmental disabilities. Although methodological refinements have improved the validity of these assessments (e.g., Fisher et al., 1992), recent research findings indicate that some methods may be associated with false negatives. For example, DeLeon, Iwata, and Roscoe (1997) found that the potential reinforcing efficacy of nonfood items was unclear when highly preferred food items were included in a multiple-stimulus selection array. That is, when leisure items and food items were combined in the array, leisure items were approached on a relatively small proportion of trials, indicating that they would not function as reinforcers. When food items were removed from the array, some leisure items were approached on a high proportion of trials and were shown to increase behavior for 2 participants.

Although the study by DeLeon et al. (1997) focused on the relative preference for food versus nonfood items, results have broader implications for the design of preference assessments in which individuals must select among two or more items. Their findings suggest that the composition of a selection array may influence the outcomes of common preference assessments. The purpose of this study was to replicate and extend DeLeon et al. by evaluating individuals' preferences for and the reinforcing effectiveness of nonfood items ranked as less preferred in preference assessments.

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METHOD

Participants and Setting

Participants were Brad, an 8-year-old boy with moderate mental retardation, and Mark, a 14-year-old boy with severe mental retardation. Brad had no motor or sensory deficits. Mark was nonambulatory and had no sensory deficits. Both had poor expressive language skills. Sessions were conducted in unused classrooms at the participants' schools.

Response Measurement and Reliability

Approach responses were recorded by trained observers via paper and pencil when the participant reached for one of two items presented concurrently and grasped the item for 5 s during the preference assessments. The number of times each item was approached was divided by the total number of times it was presented, and this number

was multiplied by 100%. Responses consistent with target behaviors specified in the participants' educational plans were selected for the reinforcer assessments. For Brad, the response involved picking up small wooden or plastic blocks from a table and dropping them into a plastic bucket. Frequency data on Brad's responses were collected via laptop computers, and the data were expressed as number of responses per minute. For Mark, the response involved crawling (he was unable to walk) to one of two rectangular poster boards that were taped onto the carpet. Observers used laptop computers to record the duration of in-square behavior, defined as having any part of the body inside the square, and the data were expressed as percentage of session time spent in the squares. A second observer recorded data independently during 67% of the preference assessments, and interobserver agreement was calculated by dividing the total number of agreements by the sum of agreements plus disagreements and then multiplying this number by 100%. Mean interobserver agreement was 95% for Brad and 98.5% for Mark. During the reinforcer assessments, a second observer independently collected data during 69% of Brad's sessions and 43% of Mark's sessions. Interobserver agreement was calculated by dividing the sessions into consecutive 10-s intervals. The number of agreements, defined as both observers scoring the same number of responses (Brad) or seconds of the response (Mark) in a given interval, was divided by the number of agreements plus disagreements and multiplied by 100%. Mean interobserver agreement was 97% for Brad and 95% for Mark.

Procedure

Participants were exposed to two preference assessments and a reinforcer assessment. Each preference assessment was completed in one or two sessions lasting 10 to 20 min each, and sessions were conducted on separate days. For the reinforcer assessment, two to four 10-min sessions were conducted 1 to 5 days per week.

Preference assessments. Nine or 10 nonfood items were identified for each participant via a single-presentation preference assessment. Items that were approached on at least 80% of the trials in the single-presentation assessment were included in the complete-array assessment, a stimulus-choice preference assessment similar to that described by Fisher et al. (1992). Items were presented in pairs, and each item was paired with every other item twice. The five lowest ranked stimuli from the complete-array assessment then were included in a second assessment, the partial-array assessment. Procedures used in both assessments were otherwise identical.

Reinforcer assessments. For Brad, the therapist delivered one instructional trial using verbal, gestural, and physical prompts at the start of each session and a verbal prompt thereafter every time Brad failed to respond for 30 s. During baseline, no consequences were provided for putting blocks in the bucket. During reinforcement, each correct response produced 20-s access to the highest ranked item from Brad's partial-array assessment (the octopus).

At the start of each session, Mark was placed on a designated spot on the floor and was permitted to crawl forward into one of two posterboards (71 cm by 91 cm) that had been taped onto the carpet 81 cm to the left and right in front of him. The squares were 1.2 m apart. He was returned to the designated starting position whenever he remained in one square for 30 s. During baseline, both squares were empty, and no consequences were provided for in-square behavior. During reinforcement, the highest ranked item from the partial-array assessment (koosh ball) was placed in one square (the reinforcement square), and the other square remained empty (the control square). The square into which the ball was first

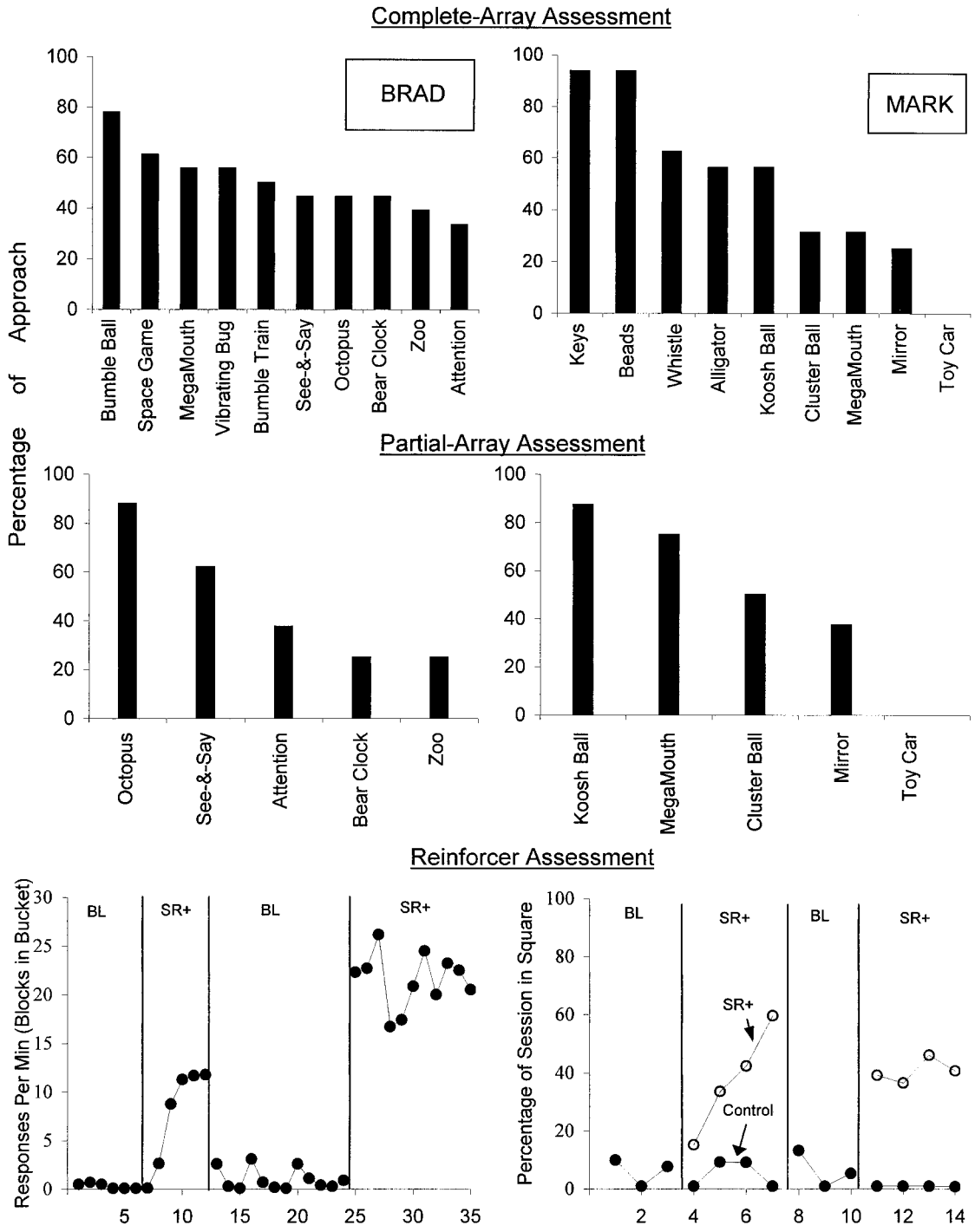

Figure 1. Approach percentages for each item during the complete-array assessment (top panel) and partial-array assessment (middle panel); number of responses per minute (blocks in the bucket) or percentage of session time (in square) across baseline (BL) and reinforcement (SR+) sessions during the reinforcer assessment (bottom panel).

placed alternated across sessions, and the ball was moved into the other square during the latter half of each session. Mark could obtain the reinforcer for 30 s by crawling into the designated reinforcement square. If Mark tried to leave the square with the ball, it was returned to the square. For both participants, baseline and reinforcement conditions were alternated in a reversal design.

RESULTS AND DISCUSSION

As shown in Figure 1, the five lowest ranked items in Brad's complete-array assessment were approached on fewer than 50% of trials. During the partial-array assessment, Brad selected one of these items, the octopus, on 88% of trials. Results of the reinforcer assessment showed that Brad exhibited very low rates of responding during both baseline phases (*M*s = 0.3 and 1.0 responses per minute). Responding increased substantially during both reinforcement phases (*M*s = 7.7 and 21.5 responses per minute). Mark approached the five lowest ranked items in his complete-array assessment on fewer than 60% of trials. During the partial-array assessment, Mark approached one of these items, the koosh ball, on nearly 88% of trials. Results of the reinforcer assessment showed that the percentage of session time spent in either square was low during both baseline phases (*M*s = 5.9% and 6.2%). During the reinforcement phases, Mark spent more session time in the reinforcement square (*M*s = 37.7% and 40.6%) than in the control square (*M*s = 4.6% and 0.3%).

These findings, which are consistent with those reported by DeLeon et al. (1997), showed that less preferred nonfood items did not appear to be potential reinforcers when highly preferred nonfood items were included in a commonly used preference assessment. When low-ranked items were assessed among themselves, at least one item was approached on 80% or more of the trials. Furthermore, the highest ranked item from each participant's partial-array assessment was shown to increase behavior, indicating that less preferred stimuli can function as reinforcers. However, the generality of these findings are limited because items included in the stimulus-choice assessments were selected via a single-presentation assessment. Identifying numerous reinforcing stimuli is important because reinforcer variety may help to prevent satiation (Bowman, Piazza, Fisher, Hagopian, & Kogan, 1997). A strategy in which low-ranked items from preference assessments are routinely included in additional, smaller selection arrays may be useful for identifying alternative sources of reinforcement for individuals with developmental disabilities.

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